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example, detector can be used for mapping drive asperities, bad disc sectors or analyzing handling damage. Thus the level detector 120 detects a threshold signal amplitude measuring head disc contact. Alternatively, the head vibration detector can be used for measuring take-off velocity (TOV) for design analysis as illustrated in FIG. 5. As shown, prior to "take-off" the level detected signal amplitude 126 is large indicative of the vibrational motion of the slider and air bearing and at "take-off" signal amplitude 128 is reduced.

IN THE CLAIMS

Please amend claims 1, 4, 7, 9-12 and 14-19:

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1. (Amended) A disc drive comprising:
a disc rotationally coupled to a chassis;
a movable head suspension assembly coupled to an actuator and movable thereby having a head coupled thereto to read or write to a surface of the disc;
a transducer supported on the movable head suspension assembly to induce a transducer signal in response to head vibration; and
a detector receiving the transducer signal and outputting a level detected signal indicative of the head vibration.

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~~4. (Amended) The disc drive of claim 3 wherein the frequency filter is configured to detect at least one of a bending mode or torsion mode frequency.~~

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7. (Amended) The disc drive of claim 1 and further comprising:
a process controller coupled to the detector and configured to receive the outputted level detected signal and output a process command to reexecute a write command in drive memory.

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8. (Amended) The disc drive of claim 1 and further comprising:
a microactuator controller coupled to the transducer on
the movable head suspension assembly and
configured to transmit a signal to the transducer
to move the head.

9. (Amended) The disc drive of claim 1 wherein the disc drive
includes a plurality of discs rotationally coupled to the chassis
and a plurality of movable head suspension assemblies having a
head coupled thereto to read or write to surfaces of the plurality
of discs and including a transducer coupled to each of the
plurality of movable head suspension assemblies.

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10. (Amended) The disc drive assembly of claim 1 wherein the
transducer is configured to operate between a detection mode and
an actuation mode, in the detection mode, the transducer detecting
head vibration and in the actuation mode the transducer moving the
head.

11. (Amended) The disc drive assembly of claim 10 including:
a microactuator controller coupled to the transducer
and configured to operate the transducer in the
actuation mode.

12. (Amended) A method for operating a disc drive comprising
steps of:

- (a) providing a transducer supported on a movable head
suspension assembly having a head coupled thereto
configured to generate a transducer signal
indicative of head vibration;
- (b) moving the movable head suspension assembly to
position the head for read write operations; and

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- (c) detecting the transducer signal and outputting a level detected signal indicative of head vibration.

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14. (Amended) The method of claim 12 and further comprising the step of:

- (d) transmitting a signal to the transducer on the movable suspension assembly to move the head.

15. (Amended) The method of claim 12 and further comprising the step of:

- (d) transmitting a command to rewrite a write command in drive memory in response to the level detected signal indicative of head vibration.

16. (Amended) The method of claim 12 and comprising the step of

- (d) filtering the transducer signal to detect vibration frequencies of the head.

17. (Amended) The method of claim 12 wherein the disc drive includes a plurality of head suspension assemblies and further comprising:

- (d) individually detecting vibration for each of the plurality of head suspension assemblies.

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18. The method of claim 12 including a microactuator controller coupled to the transducer and configured to transmit a signal to the transducer to move the head and comprising the step of:

- (d) selectively operating the disc drive in a detection mode and an actuation mode, in the detection mode the transducer detecting head vibration and in the actuation mode, the transducer moving the head.

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19. (Amended) A drive assembly comprising:

a movable head suspension assembly supporting a head;
and
means on the movable head suspension assembly for
detecting head vibration.

Please add new claim 20 as follows:

20. (New) The method of claim 12 and comprising the step of:

(d) filtering the transducer signal to detect one of
bending or torsion mode vibration frequencies.